Guidelines for Anaesthesia and Sedation for Patients Who Are Breastfeeding

Guidelines from the Association of Anaesthetists

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BREASTFEEDING

- It is one of the most effective ways to ensure the health and well-being of both the child and the parent.
- It is a living fluid that is continually changing according to the needs of the child.
- It provides antibodies and protection for the child from infections.
- It has shown to decrease the risk of a baby from illnesses including: respiratory infections; diarrhoea; necrotising enterocolitis; otitis media; diabetes; heart disease; obesity
- It protects the lactating parent from breast and ovarian cancers, type 2 diabetes and supports the building of relationships between parent and baby

WHY DOES THIS MATTER?

Global Health Impact

- WHO recommends exclusive Breastfeeding for 6 months
- Continued Breastfeeding up to 2+ years
- Increasing Breastfeeding rates globally saves ~823,000 child deaths <5y/yr

Why Breastfeeding Patients are Overlooked

- Advice historically variable & inconsistent
- Caused unnecessary Breastfeeding interruption ≥24h
- 'Pump & dump' advice
- Fear of drug transfer = early Breastfeeding cessation

METHODS

1

Multidisciplinary Working Party

Anaesthetists, pharmacists, midwives, infant feeding advisers, people with lived experience — selected based on clinical/academic expertise in breastfeeding and/or guideline production.

2

Literature Review

Targeted PubMed search: 'anaesthesia', 'breastmilk', 'breastfeeding', 'surgery'. Focus on articles published since 2020 guidelines. Also consulted UKDILAS, WHO guidelines, Breastfeeding expert journals, websites (medicinescomplete.com).

METHODS

3

Initial Recommendations List

A long list of recommendations was compiled covering conduct of breastfeeding during perioperative period including organisational and logistical principles. Refined by virtual round table.

4

Round Modified Delphi Process

Authors rated each recommendation as 'include', 'revise', or 'exclude'. Anonymous comments provided. Final recommendations shared with supporting organisations.

KEY RECOMMENDATIONS (1–4)

1 Any patient with a child aged <2 y should routinely be asked if they are breastfeeding or expressing breastmilk during pre-operative assessment.

2 Patients should be supported to breastfeed immediately before surgery (directly or by expressing) and resume once alert, orientated and able to feed/express independently.

3 Anaesthetic, sedative and analgesic medicines transfer to breast milk in only very small amounts. For almost all medicines used peri-operatively, there is NO evidence of adverse effects on the breastfed child.

4 'Pumping and dumping' after anaesthesia is NOT necessary. 'Sleep and keep' is now recommended.

KEY RECOMMENDATIONS (5–7)

5 For urgent/emergency surgery or inpatient care, patient and child should remain together wherever possible with appropriate support for care of the child.

6 Anaesthetic departments should have a breastfeeding champion to support colleagues, patient discussions, advocacy, and departmental education.

7 Hospitals should engage with the UNICEF Baby Friendly Initiative — an evidence-based programme to support starting and continuation of breastfeeding.

KEY RECOMMENDATIONS (8–11)

8 Hospitals should provide a suitable environment for breastfeeding: single room, another adult present to care for child.

9 For ALL patients (including BF mothers), postoperative analgesia should be multimodal and opioid-sparing when possible.

10 Codeine is NOT recommended if opioids are required, due to variable metabolism concerns and risk of excessive sedation in some children.

11 Dihydrocodeine or morphine are preferred opioids. Lowest effective dose for shortest period. Child should be observed for signs of sedation.

KEY RECOMMENDATIONS (12-14)

12 Day surgery is preferable when possible. Consider scheduling Breastfeeding patients first on theatre list to minimise time away from child.

13 Breastfeeding while on chemotherapy is NOT recommended due to passage of medication into milk with associated adverse effects.

14 Patient information leaflets and additional resources should be available on compatibility of medicines, sedatives, analgesics during BF and guidance on perioperative BF support.

PRE-OPERATIVE ASSESSMENT & CONSENT

Questions to Consider

- Does the patient wish to continue to breastfeed?
- What is the impact of interrupted lactation? (blocked ducts/mastitis, exposure to formula in allergic child)
- In preterm infants: risk of Necrotizing Enterocolitis if breastmilk replaced even temporarily by formula

Discuss With the Patient

- Their wishes to continue to breastfeed
- Most suitable type of anaesthesia least disruptive to breastfeeding. Early return of consciousness after GA is desirable
- Effective analgesic and anti-emetic strategies will be used
- Medicine transfer to breast milk: intraoperative and postoperative risks vs. benefits of continuing Breastfeeding
- Document a plan to recommence Breastfeeding as soon as possible after surgery
- Discuss expressing and storing breastmilk

PERIOPERATIVE MANAGEMENT

Feeding Schedule

Support Breastfeeding immediately before surgery. Resume once alert, orientated, able to feed/express independently. 'Sleep and Keep' — pumping and dumping is NOT necessary.

Anaesthesia Technique

Regional anaesthesia preferred (least interference with Breastfeeding ability). If GA required: TIVA (propofol-based) with EEG monitoring where appropriate. Opioid-sparing multimodal analgesia (paracetamol + NSAIDs are synergistic).

Postoperative Analgesia

Paracetamol + NSAIDs as first-line. Opioids at lowest effective dose for shortest period. Observe child for sedation/drowsiness if opioids used.

PERI-OPERATIVE MANAGEMENT

Fluid Management

Breastfeeding mothers have increased fluid requirements. Minimise fasting time (**Sip Til Send protocol** unless contraindicated). Antiemetic strategy essential may reduce PONV risk.

Positioning & Surgical Care

Avoid additional pressure on breast tissue. Prone positioning may predispose to mastitis. For prolonged surgery: consider milk expression to maintain supply. Avoid engorgement.

Discharge & Night Safety

NOAH (No-One at Home) protocol NOT recommended for Breastfeeding patients. Advise on stepping down analgesia: opioid first ⟶ NSAIDs ⟶ paracetamol.

PHARMACOKINETICS — KEY DRUG DETAILS

Propofol

Only 0.025% transferred to breastmilk. Short half-life. Resume Breastfeeding as soon as patient recovered from GA.

Ketamine

Rapid redistribution from plasma. Safe.

Midazolam

Extensive first-pass metabolism; low blood levels in child. Resume BF after patient recovered from procedure.

Remimazolam

Rapidly metabolised by tissue esterase. Half-life 0.7 h, no active metabolites. Resume when alert and awake.

Dexmedetomidine

Half-life 2–3 h. Volume of distribution large; 94% protein binding; negligible passage to breastmilk. Can BF once awake.

Morphine

Small amounts in breastmilk. Active metabolite M6G more potent. Preferred opioid for BF patients. Single dose: no detrimental effects.

Dihydrocodeine

Oral bioavailability 21%. Half-life 3.3–4.5h. Preferred weak opioid — more predictable metabolism than codeine.

Codeine

NOT recommended. CYP2D6 polymorphism — ultrarapid metabolisers: high morphine in breastmilk → neonatal depression/death.

Fentanyl/Alfentanil

Minimal amounts detected in breastmilk after single IV dose. Bioavailability via oral route <70%. No waiting period after short-term use.

Pethidine

NOT recommended. Active metabolite norpethidine (t½ 13–63h in neonates). Accumulation → drowsiness in neonate.

NSAIDs

Limited transfer due to low lipid solubility and high protein binding. Ibuprofen and diclofenac used extensively post-partum. Avoid in child with ductus-dependent cardiac lesion.

Paracetamol

First-line analgesic.

TABLE 1 — MEDICINE TRANSFER TO BREAST MILK (PERIOPERATIVE)

SAFE — Pass in low levels into breastmilk. Can breastfeed as normal.

IV Anaesthetics	Propofol, Thiopental, Etomidate, Ketamine
Inhalational Agents	Sevoflurane, Isoflurane, Desflurane, Halothane
Sedatives	Nitrous oxide, Midazolam , Diazepam
Analgesics	Paracetamol; NSAIDs: Ibuprofen, Diclofenac, Naproxen, Celecoxib, Ketorolac
Opioids	Morphine, Dihydrocodeine, Remifentanil, Fentanyl, Alfentanil
Local Anaesthetics	All local anaesthetics in current practice
NMBDs	Suxamethonium, Rocuronium, Vecuronium, Atracurium
NMBD Antagonists	Neostigmine, Sugammadex*
Anti-emetics	Ondansetron, Granisetron, Dexamethasone, Metoclopramide, Domperidone

USE WITH CAUTION — Observe child for unusual drowsiness.

Tramadol (unusual drowsiness) | Oxycodone >30 mg/day (drowsiness) | Pethidine (unusual drowsiness)

CONTRAINDICATED — Aspirin (analgesic doses) | Codeine (not recommended)

**Sugammadex reduces effectiveness of hormonal contraception — advise barrier contraception for 7 days after administration.*

Emergency & Urgent Surgery

- Same principles apply as elective surgery
- Patient and child should remain together wherever possible
- Local information available: breast pump access, safe breastmilk storage
- Specialist child feeding support as required
- Sudden cessation of Breastfeeding can impact health: mastitis, blocked ducts — important to ensure gradual cessation with support if required
- Breastfeeding can continue safely with antibiotics (no evidence of harm); check via LactMed for individual antibiotics
- If patient unable to Breastfeeding or no longer wishes: effective management of gradual cessation is essential

Surgery for Cancer

- Breastfeeding possible if surgery not on breasts and major ducts not excised
- Chemotherapy: NOT compatible with Breastfeeding— passage into milk with adverse effects
- **Green Top Guidelines**: ≥14 days interval after last chemo session before restarting Breastfeeding to allow drug clearance
- Patients should NOT Breastfeeding while taking trastuzumab (Herceptin) or tamoxifen
- Five half-lives should elapse before recommencing BF after chemotherapy
- Desire to pump and discard until treatment completed

Sedation on the ICU

- ICU Society recommends routine aspects of neonatal care including Breastfeeding should be supported
- Limited data for critically ill patients
- 102 patients in one retrospective US study: lactation initiated in 47/58; continued until discharge in 38/58
- If sedated and unable to express: relative or appropriate person may need to express milk to avoid engorgement

SPECIAL POPULATIONS — MILK DONORS & SEDATION ICU DRUGS

Milk Donors

- Donors should discuss temporary restrictions on donation with their milk bank
- Milk expressed in hospital will likely need to be discarded (donated milk used for <1500g NICU babies)
- If donating while feeding own child: treat as currently BF patient
- If exclusively donating (not feeding own child): treat as BF patient for peri-operative care, encourage normal expressing regimen

ICU-Specific Drugs & Breastfeeding

- Vasopressors (noradrenaline/adrenaline): poor oral bioavailability, unlikely to affect child. Both may inhibit milk production.
- Hydrocortisone: normal component of breastmilk; compatible with Breastfeeding
- Amiodarone: risk of neonatal hypothyroidism.
- Beta-blockers: excreted in breastmilk, risk of hypoglycaemia & bradycardia. Metoprolol and labetalol = lowest risk
- Proton pump inhibitors: all currently used PPIs compatible with Breastfeeding

Cardiovascular Medicines Used Peri-operatively

- Atropine: trace concentrations in breastmilk; may inhibit lactation (reduces prolactin). Compatible with Breastfeeding.
- Ephedrine: limited acute intra-operative use not likely to harm child.
- Phenylephrine: poor oral bioavailability 38%; not likely to produce clinical effects in breastfed child. May reduce milk supply .

Discussion

- Perioperative management of Breastfeeding patients is often a source of uncertainty for both Health care Practitioners and patients
- This guideline aims to support both with pragmatic recommendations ensuring Breastfeeding is not interrupted unnecessarily and that the child is exposed to minimal risk
- Many recommendations relate to specific medicines, but logistical interventions for supporting Breastfeeding in the perioperative period should not be underestimated
- Improved Breastfeeding counselling training needed for all professionals who encounter a lactating patient peri-operatively
- Guidelines are only valid at time of publication — continuously updated online information sources should be used

Limitations

- Very limited evidence base
- Studies predominantly case reports or small retrospective studies with potential for bias
- Precludes use of GRADE recommendations
- Evidence continues to evolve — new medicines enter clinical practice over time

- **CONCLUSION:-**
- Ask every patient with a child <2 years if they are breastfeeding — make it routine in pre-operative assessment.
- 'Sleep and Keep' replaces 'Pump and Dump'. Breastmilk after anaesthesia is safe — no discarding required.
- Almost all perioperative medicines transfer to breastmilk in only very small amounts with no evidence of harm to the breastfed child
- Codeine is NOT recommended for breastfeeding patients. Prefer dihydrocodeine or morphine at lowest effective dose.
- Multimodal, opioid-sparing analgesia (paracetamol + NSAIDs) is the foundation. Ondansetron is the preferred antiemetic.
- Every anaesthetic department should have a breastfeeding champion. Support the patient, educate the team, and create local pathways.

THANK YOU